

Claims 3-4 were further rejected under Section 112, second paragraph for the recitation of 'the selected value.' And, Various objections were also made to the drawings and to the specification.

Responsive to the rejections of the claims, independent claims 1 and 16 are amended as noted herein in manners believed to recite more clearly the invention of the present application 5 over the cited references, taken alone or in combination.

Support for the amendments to the claims are found in the specification, e.g., on page 10, lines 11-12, page 12, lines 13-14, and page 12, line 33.

Tsuda, cited against independent claims 1 and 16, fails to disclose apparatus, or a method, 10 by which power control change indications form requests that request the power levels of the communication signal, not be increased if the fading of the communication signal is determined to be beyond a selected threshold.

While the Examiner relies specifically on column 3, lines 39-49 of Tsuda, this section states that transmission of a call request is stopped when the receive signal power of a channel 15 control signal is detected.

Tsuda does not appear to disclose, in the cited section, or elsewhere, a power controller, operable as now recited. The other references cited against the claims also do not appear to disclose such structure or method.

Accordingly, no combination of the cited references can be formed to create the 20 invention, as now-recited in claim 1. Method claim 16, as now-amended is believed to be patentably distinguishable over these references for the same reasons. And, as the dependent

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claims include all of the limitations of their respective parent claims, these claims also are believed to be distinguishable over the cited references, taken alone or in combination, for the same reasons as those given with respect to their parent claims.

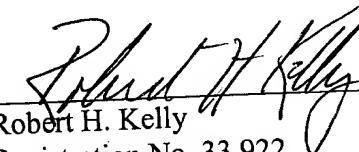
Additional amendment is made to claim 3 to overcome the Section 112, second paragraph  
5 rejection of claims 3-4. Amendments to the specification are made to overcome the various objections made thereto. And, enclosed herewith under separate title, is a request pursuant to Rule 125. The proposed drawing changes contained therein are believed to overcome the drawing objections thereto.

In light of the foregoing, independent claims 1 and 16, and the dependent claims  
10 dependent thereon, as now-amended, are believed to be in condition for allowance. Accordingly, re-examination and reconsideration for allowance of the claims is respectfully requested. Such early action is earnestly solicited.

Respectfully submitted,

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APPENDIX A

Amended paragraphs of the specification, marked to show changes:

Page 9, lines 21-31, amend the existing paragraph by substituting therefor the  
5 following substitute paragraph:

The communication system 10 includes network infrastructure, here shown to  
include an MSC (mobile switching center) 22 [220]. The MSC 22 is coupled to a BSC  
(base station controller) 24 which, in turn, is coupled to a BTS (base transceiver  
station) 26. The BTS 26 defines a cell of the communication system 10 within which  
10 communication signals transmitted by the BTS 26 transmitted upon a forward link  
channel can be received by a mobile station 12, and within which communication  
signals transmitted by the mobile station 12 can be received by the BTS 26. Two-way  
communication is thereby effectuated with the mobile station 12 by way of a radio air  
interface which defines the radio link 14 between the network infrastructure and the  
15 mobile station 12.

Page 11, lines 21-29, amend the existing paragraph by substituting therefor the  
following substitute paragraph:

A mobile station 14 further includes a controller 84 [86], formed of an ASIC  
(application specific integrated circuit), processing device, or combination thereof. The  
20 controller 84 [86] includes functional elements which are operable pursuant to an  
embodiment of the present invention. Here, the controller is shown to include a  
determiner 86 [88] and a power controller 88 [90]. The determiner is coupled to the  
determiner 86 [88] and a power controller 88 [90]. The determiner is coupled to the

receive portion of the mobile station 12 to receive indications of signals [signal] detected by the receive portion of the mobile station. And, the power controller 88 [90] is coupled to the determiner to receive indications of the determiner to receive indications of determinations thereat.

5 Page 12, lines 21-31, amend the existing paragraph by substituting therefor the following substitute paragraph:

In one implementation, and as illustrated, the determiner includes a signal-to-noise ratio (SNR) calculator 92 coupled to receive indications of signal strength levels of communication signals transmitted by the network infrastructure to the mobile station and also to receive indications of corresponding noise levels. The SNR calculator 92 calculates a signal-to-noise ratio, and provides an indication of the ratio calculated thereat to a calculator/comparator [calculator/comparitor] 94. The calculator/comparator [calculator/comparitor] compares the calculated ratio with a selected threshold value. If the signal-to-noise ratio is not greater than the selected threshold, the communication channel is determined to exhibit a deep fade condition. 15 An indication of such determination is provided to the power controller.

Page 13, line 9 – Page 14, line 14, amend the existing paragraphs by substituting therefor the following substitute paragraphs:

In another embodiment, indications of a signal strength of a pilot signal generated by network infrastructure and broadcast to a mobile station, such as the 20 mobile station 12, are provided to a pilot strength calculator and averager 95.

Indications of the signal strength of the pilot signal together with an average value over time are provided to the calculator/comparator [calculator/comparitor] 94. If ratios of the pilot signal strength relative to its average value over time is less than a selected threshold, as compared by the comparator [comparitor] 94, a determination is made that the communication channel exhibits a deep fade condition. And, indication of the determination is provided to the power controller 88. The power controller, responsive thereto, requests that subsequent communication signals transmitted to the mobile station be of reduced power levels, again until a determination is subsequently made that the communication channel no longer exhibits a deep fade condition.

10 In another implementation, and also as illustrated in the Figure, a derivative calculator 96 is utilized to calculate a first, or second, derivative of the pilot signal strength. Indications of the calculator derivative are provided to the calculator/comparator [calculator/comparitor] 94. The calculator/comparator [calculator/comparitor] 94 compares the calculator derivative with a selected value, such as a selected negative value. If the calculated value of the derivative is beyond, for instance, or more negative than the selected value, a determination is made that the communication channel exhibits a deep fade condition. An indication is provided to the power controller 88 to cause a request to be made that the power level of signals subsequently transmitted to the mobile station be reduced in power at least for the duration of the deep fade condition.

In another implementation, also illustrated in the Figure, a counter 97 maintains a count of power-up commands generated by the power controller to request power level increases. If a selected number of power-up increase requests are successively generated, a deep fade condition on the communication channel is determined to be exhibited. Count values provided by the counter 97 are provided to the calculator/comparator [calculator/comparitor]. If a selected number, for example, twenty successive power-up commands are generated by the power controller 88, a determination is made that the communication channel exhibits a deep fade condition. Results of the determination are provided to the power 88, and the power controller generates power-down requests to reduce the power levels of communication signal subsequently transmitted by the network infrastructure.

Cancel the paragraphs on page 15, lines 23-31

Amended claims, marked to show changes:

1. (Amended) In a communication system having a sending station and a receiving station, the sending station for sending a communication signal upon a communication channel, to the receiving station, the communication channel susceptible to fading, an improvement of closed loop power control apparatus for selectively controlling power levels of the communication signal, said power control apparatus comprising:
  - a determiner coupled to receive indications of the communication signal, once transmitted upon the communication channel and received at the receiving station, the determiner for determining, at least when fading exhibited by the communication channel upon which the communication signal is sent causes fading of the communication signal beyond a selected threshold; and
  - a power controller coupled to receive indications of determinations made by said determiner, said power controller for selectively providing power control change indications of levels responsive to determinations made by said determiner to the sending station, the power control change indications forming requests requesting an increase, or decrease, in power levels of the communication signal when subsequently sent upon the communication channel, the power control change indications of levels that request the power levels of the communication signal, subsequently to be sent, not to be increased [not to cause an increase in power levels of the communication signal] if the determiner determines the fading of the communication signal to be beyond the selected threshold.

3. (Amended) The power control apparatus of claim 1 wherein said determiner is further for determining, subsequent to determining when the fading exhibited by the communication channel is beyond the selected threshold, when the fading exhibited by the communication channel returns to be within the selected threshold, said determiner for determining the fading to be within the selected threshold responsive to the value of a signal-to-noise [ration] ratio returning to be greater than [the] a selected value.

4. (Amended) The power control apparatus of claim 3 wherein said power controller further provides power control change indications to the sending station to [permit] request an increase in power levels of the communication signal when the fading exhibited by the communication channel returns to be within the selected threshold.

10. (Amended) The power control apparatus of claim 1 wherein said power controller further provides at least one power control change indication to the sending station to [cause] request a decrease in the power levels of the communication signal if the determiner determines the fading of the communication signal if the determiner determines the fading of the communication signal to be beyond the selected threshold.

11. (Amended) The power control apparatus of claim 10 wherein said power controller provides a selected plurality of power control change indications to the sending station

to [cause] request the decrease in the power levels of the communication signal by a selected magnitude of power level decrease.

16. (Amended) A closed-loop power control method for selectively controlling power  
5 levels of a communication signal sent by a sending station upon a communication channel to a receiving station, the communication channel susceptible to fading, said method comprising:  
determining, responsive to indications of the communication signal once transmitted upon the communication channel and received at the receiving station, at least when fading exhibited by the communication channel upon which the communication signal is sent causes  
10 fading of the communication signal beyond a selected threshold; and  
selectively providing power control change indications to the sending station responsive to determinations made during said operation of determining, the power control indications of levels forming requests requesting an increase, or decrease, in power levels of the communication signal when subsequently sent upon the communication channel, the power  
15 control change indications of levels that request the power levels of the communication signal, subsequently to be sent, not to be increased [not to cause an increase in power levels of the communication signal only] if the fading of the communication signal determined during said operation of determining is determined to be beyond the selected threshold.

17. (Amended) The method of Claim 16 wherein the power control change  
20 indications, send during said operation of selectively providing power control change indications

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to the sending station, are of levels to cause a decrease in the power levels of the communication  
signal if the fading is determined to be beyond the selected threshold.